




SAFETY PRECAUTIONS	1
INTRODUCTION	2
INSTALLATION CONNECTIONS	3
DETAILED INSTALLATION	4
DESIGN PHILOSOPHY	9
TECHNICAL DATA	12
CARE and HANDLING	13
WARRANTY	14
WARRANTY REGISTRATION	15
ADDRESS	16

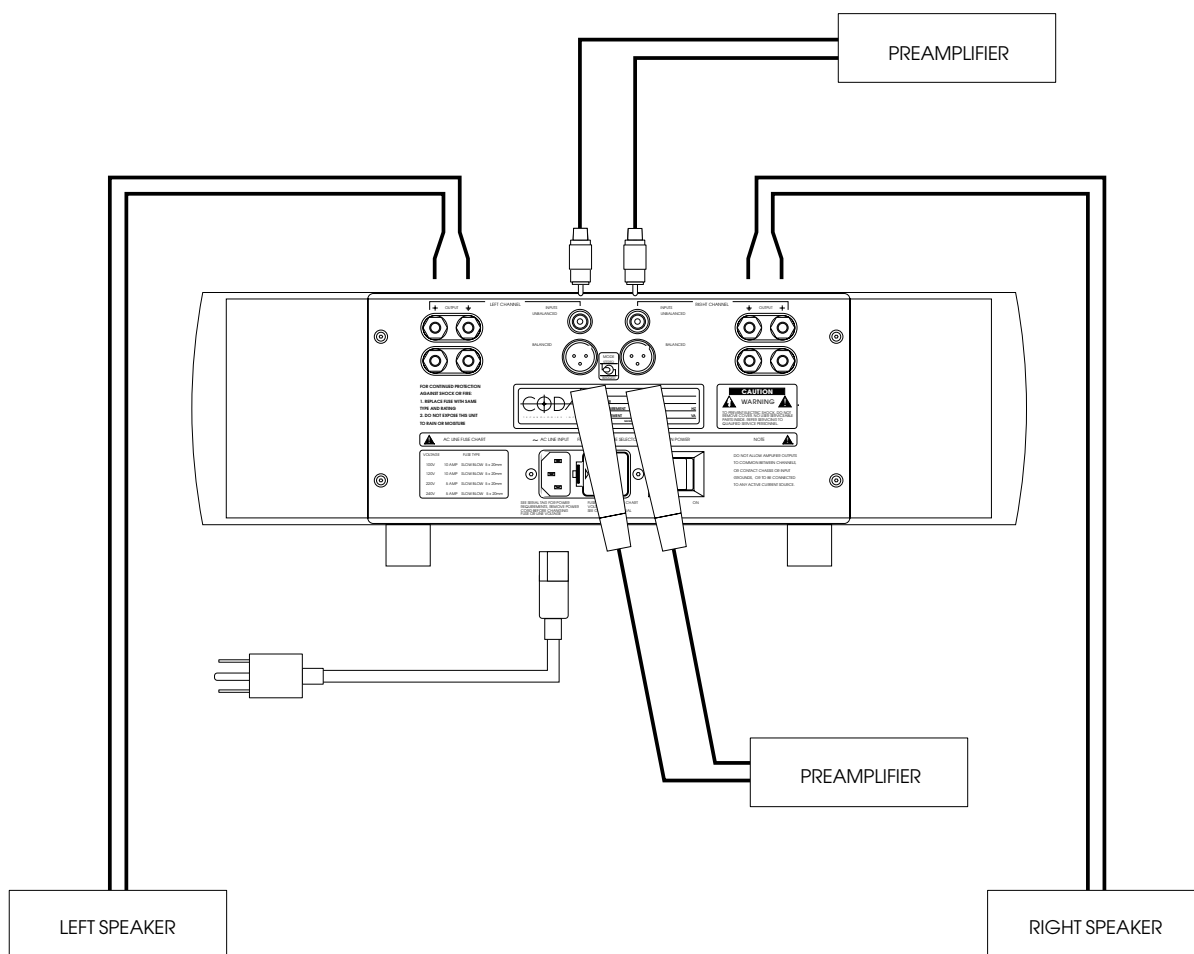
CAUTION	
	WARNING 
CAUTION: TO PREVENT ELECTRIC SHOCK, DO NOT REMOVE COVER. NO USER SERVICEABLE PARTS INSIDE, REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.	
	THIS SYMBOL IS TO ALERT YOU OF THE PRESENCE OF UNINSULATED DANGEROUS VOLTAGE WITHIN THE UNIT'S ENCLOSURE THAT MAY BE OF SUFFICIENT MAGNITUDE TO CONSTITUTE A RISK OF ELECTRIC SHOCK.
	THIS SYMBOL IS INTENDED TO ALERT YOU OF THE PRESENCE OF IMPORTANT OPERATING AND MAINTENANCE INSTRUCTIONS IN THE LITERATURE ACCOMPANYING THE UNIT.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE. TO AVOID ELECTRICAL SHOCK, DO NOT OPEN THE UNIT. REFER SERVICING TO QUALIFIED PERSONNEL.

- CAUTION** -
- Never install or remove the power cord from the chassis unless it has been disconnected from the AC power source first.
 - Never pull on the power cord when removing it from an AC power source. Grasp it by the plug.
 - Do not leave the power cord connected to an AC power source unless it is connected to the unit.
 - It is recommend that during extended periods of nonuse that the units power cord be unplugged from its AC power source.
 - Route the AC power cord so that it will not be damaged or walked on.

This amplifier is a precision device, designed in an effort to provide the listener with unmatched sound quality, design, and construction. In order to operate your amplifier properly and to realize all of the capabilities of the Amplifier S5 we recommend that you read this entire manual carefully.

The first section of the installation instructions for the AMPLIFIER S5 is a diagram of the default (stereo) configuration required to bring this amplifier into an operating mode. These brief steps will allow you to begin operating your system. Make sure during installation that the main AC power switch on the back of the AMPLIFIER S5 is turned off. While the diagram may be self explanatory, we strongly recommend that you read the detailed instructions following this introductory section.



I. Source-Output, Power Connections and Controls

The connectors and controls are clearly marked on the back panel of the AMPLIFIER. Note the correct left or right channel orientation. The function and channel markings on the rear panel correspond to the front panel controls and their signal paths.

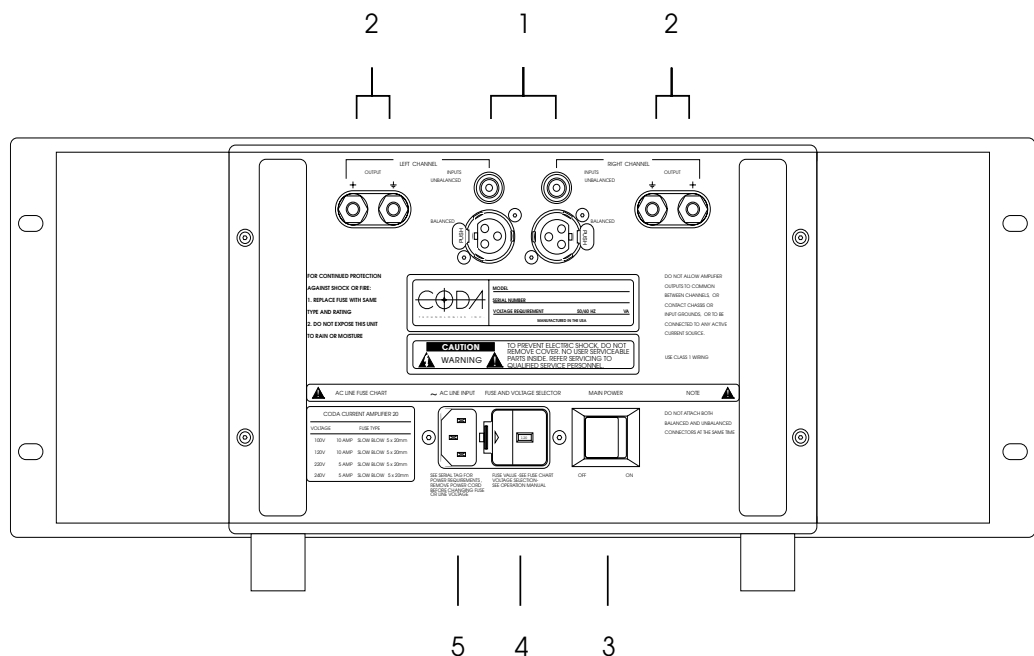
1. The UNBALANCE and BALANCED inputs should be attached to the appropriate unbalanced and balanced outputs of a preamplifier either directly or through a crossover or processor, as appropriate to the application.

2. The LEFT OUTPUT, RIGHT OUTPUT should be attached to the left and right speakers.
NOTE: THERE ARE NO OUTPUT FUSES SO AS TO INSURE A LOW OUTPUT IMPEDANCE. SPEAKER PROTECTION IS LEFT TO THE SPEAKER MANUFACTURER AS THEY WOULD BEST KNOW HOW TO PROTECT THEIR SPEAKER.

3. The MAIN POWER switch, once all appropriate connections are made, may be left on as the AMPLIFIER draws a negligible amount of current when the BIAS is turned off.

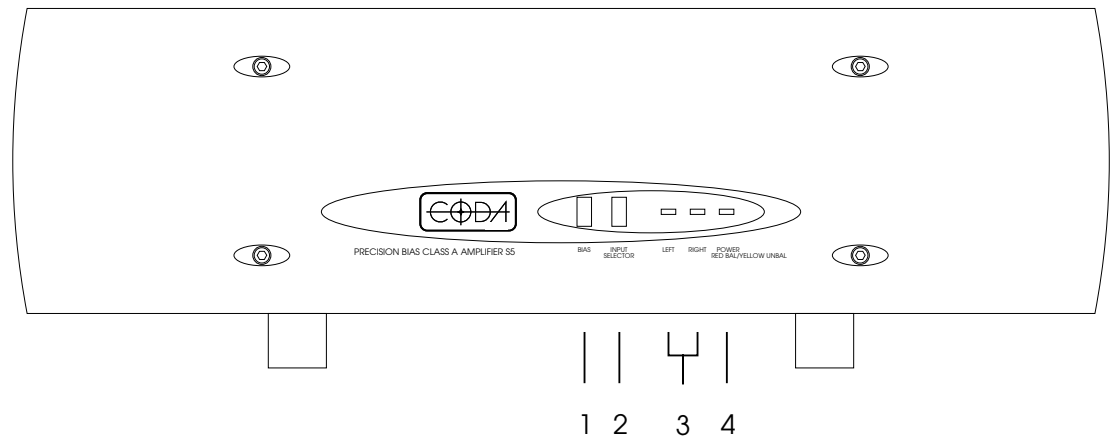
4. The FUSE AND VOLTAGE SELECTOR houses a 5 X 20 slow blow fuse and voltage selector cartridge. Should the fuse blow, contact a Coda dealer or call Coda directly. When changing the fuse, or altering the voltage selection be sure this unit is disconnected from its AC power source.

5. The AC LINE INPUT should be attached to the power cable provided with the amplifier. After making the appropriate connections insert the three prong safety plug into an appropriate AC power source. Once the AMPLIFIER S5 is properly connected, the power switch may be turned on and the led on the front panel will light indicating a ready state.



II. Front Panel Control Functions and Indicators

1. The BIAS button turns on the bias and opens shunting relays that mute the input.
2. The INPUT SELECTOR button switches between the balanced and unbalanced inputs.
3. These LEDs when lit, indicate that the bias is activated in the AMPLIFIER S5.
4. This two color LED indicates that the main power is on. When it is red the balanced inputs are in use. When it is yellow the unbalanced inputs are in use.

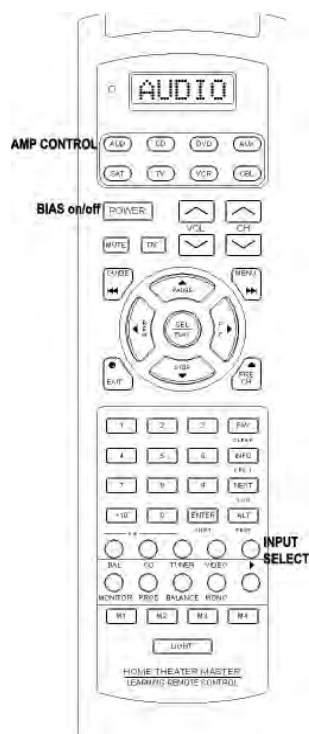


Note: If a power interruption occurs to the system the AMPLIFIER S5 defaults to bias off.

III. Remote Control

The AMPLIFIER S5 may be operated by remote control. To operate, set the SL-9000 remote to **(AUD)**. The optional universal remote can be used to control other Coda products as well as many other audio and video components. For instructions on the remotes other capabilities, refer to the Universal Remote Control Manual.

1. The **(POWER)** button turns on the bias and opens shunting relays that mute the input.
2. The **(>)** button switches between the balanced and unbalanced inputs.



Note: If a power interruption occurs to the system the AMPLIFIER S5 defaults to bias off.

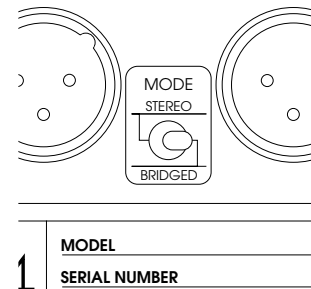
III. BRIDGED SETUP

WARNING: DO NOT OPERATE THIS AMPLIFIER WITH THE TOP COVER REMOVED. NEVER MAKE ANY INTERNAL ADJUSTMENTS WHILE THIS AMPLIFIER IS CONNECTED TO AN AC POWER SOURCE.

BRIDGED operation consists of one AMPLIFIER S5 per channel. The amount of power from a stereo AMPLIFIER S5 is 50 Watts Class A per channel @ 8 Ohms. A bridged AMPLIFIER S5 is 200 Watts with 50 Watts class A per chassis. To bridge, set the MODE switch on the back of the amplifier to the BRIDGED position.

Back of AMPLIFIER S5

NOTE: TURN THE MAIN AC POWER SWITCH ON THE BACK OF THE AMPLIFIER S5 OFF BEFORE ALTERING THE MODE SWITCH OR CONNECTING OR DISCONNECTING ANY CABLES.

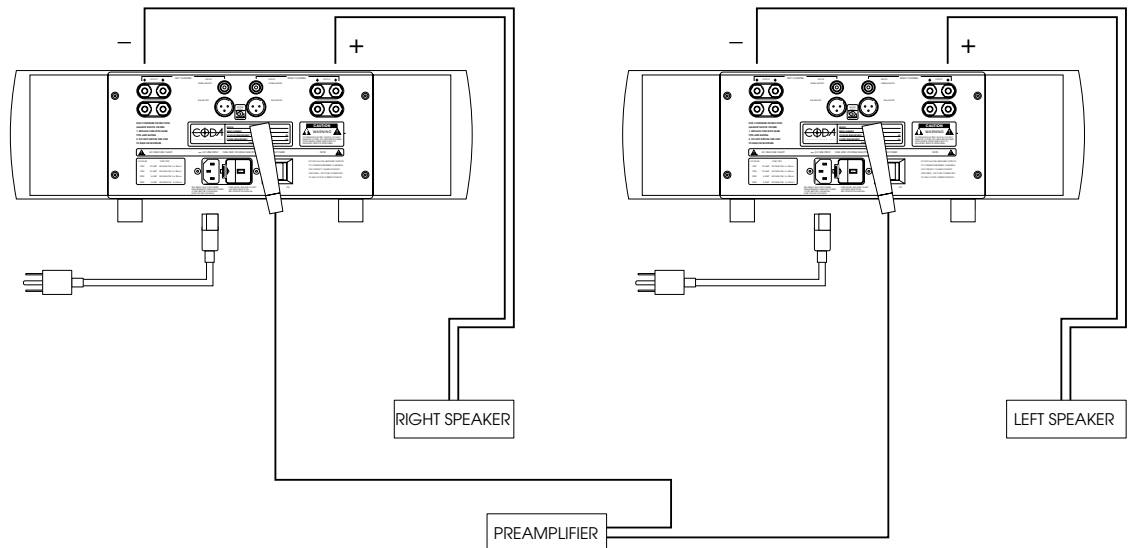


The bridging switch commons the inputs of the AMPLIFIER S5, where pin 2 of the left XLR commons with pin 3 of the right XLR, and pin 2 of the right XLR commons with pin 3 of the left XLR. Whichever input is used the output of that channel will be the positive signal and the channel which has no input will be the negative signal.

The set up diagram for BRIDGED operation is on the following page.

BRIDGED set up diagram

Before setting up the BRIDGED AMPLIFIER S5, read the entire DETAILED INSTALLATION section of this manual.



I. Design Philosophy and Approach

The subtlety of the design process at this level of performance makes it impossible to easily explain all of the advantages inherent in the Amplifier S5. However, we present here an overview to give you an understanding of some of its unique features and an idea of the listening experience you can expect. Often a particular technique has numerous unrelated advantages and possibilities. We make every effort to exploit these advantages with the final result being an amplifier that is greater than the sum of its individual features

The topology and component selection is built on the foundation established by the Amplifier System 100. Balanced interconnections are provided to take advantage of their greater noise rejection as in the 100. Differential voltage gain throughout provides exceptional rejection of external noise and contributes to the inherent DC stability of the circuit. This allows direct coupling without servo circuitry. The unit also uses output followers operating without feedback.

The front end of the Amplifier S5 is designed to operate without ever entering Class B operation as is common in many other designs. This combined with excellent high frequency design insures linear operation at high speed, and translates into a sonic reproduction which is extremely transparent in character. The supply take a very direct approach to high performance. First, a top quality toroid transformer and over 144,000 uf of capacitance with very low ESR and inductance is used. For optimum performance and reliability all circuitry remains continuously powered.

The specifications are consistent with what would be expected in a high current Class A amplifier design. In this design, however, an unusual degree of attention has been paid to sonically meaningful parameters.

For example, the current stage is capable of producing peak currents in excess of 100 Amperes with a degree of linearity and speed which is not matched by other designs when producing only a fraction of this current. This is achieved by the implementation of several distinct circuit features.

In the Amplifier S5 extremely wide bandwidth output transistors are used instead of the usual TO3 devices which are used in other transistor designs. Each channel uses 30 individual output transistors with a combined power rating of 1500 Watts and 120 Amperes with a bandwidth of 50 Mhz.

The manner in which the Amplifier S5 accomplishes Class A operation is also different than that employed in conventional designs. All Class A designs leave Class A operation when they are operated into loads of sufficiently low impedance or power levels. Generally, this transition will produce a large and abrupt distortion increase.

The Amplifier S5 uses bias voltages and component values which have been specifically selected to produce a precision transition with no abrupt changes in distortion or output impedance. This "Precision Bias" technique yields seamless performance regardless of the complexity of the load impedance and is particularly effective at eliminating a form of IM distortion which often occurs in these instances.

To maintain "Precision Bias" requires an advanced bias circuit that must have a very high degree of stability under a wide range of temperatures and load conditions. The usual bias network is of such high impedance and poor thermal regulation that at the extremes of operation, bias currents are ineffectively controlled. Advanced tracking techniques results in absolute control of bias currents under all conditions in the Amplifier 11.5.

The main power supply of the amplifier consists of a 1500VA toroidal power transformer with independent rectifiers to isolate the channels from one another. One hundred forty-four thousand microfarads of total capacitance provide effective filtering.

The above attributes result in a amplifier of such extreme linearity and bandwidth that no overall feedback correction is required or used. One advantage of this is a high degree of immunity from interactions with loads or cables and a superior transient response. An extremely low nonreactive output impedance is maintained well beyond 20,000 hz. The resulting uniform damping factor is not usually found in other designs.

The Amplifier S5 has all structural parts made of machined aluminum which are milled to very close tolerances yielding the seamless appearance characteristic of previous products from Coda. As with all Class A amplifiers, heat dissipation is important. The Amplifier S5 uses four massive heat sinks for efficient, noiseless, and clean thermal relief. The thermal coefficient of the heat sinks is one of the lowest and most effective in the audio industry.

II. Parts' Quality

1. Finishes - All exterior metal parts are anodized or powder coated. Anodizing for its multiple finishing and powder coating for durability.
2. Circuit Boards - Circuit boards are fiberglass epoxy with gold plating over a tin/nickel barrier. This gold layer will not corrode, while the barrier plate prevents the gold from migrating to the lower copper layer and detracting from its appearance.
3. Resistors - All are high reliability metal film 1% resistors for 1/4 watt and 5% for 1 watt.
4. Capacitors - All capacitors have been eliminated where possible on the premise that "no cap is better than the best cap." The only electrolytics used are in the power supply where large numbers provide enormous filtering capacitance for the supply.
5. Semiconductors - There are no integrated circuits (IC) in the signal path. Very high quality dual FETs were selected for their superb noise performance and precision matching. The remaining semiconductors are also of very high quality, each possessing parameters ideally suited for the specific application.
6. Connectors - Coda employs a standard RCA configuration with a gold plated case. The XLR input and output connectors are manufactured by Neutrik of Switzerland. Speaker connectors are also gold plated.
7. Wire - All signal wire has been eliminated whenever possible. Where wire is used, Coda employs solid silver and silver plated copper, 141 strand, 18 guage wire with a silicone insulation.

AMPLIFIER S5

Rated Power: 50 Watts with 50 Watts class A @ 8 Ohms both channels driven from 20Hz to 20kHz
Frequency Response: DC to -3dB @ 100kHz
Distortion: < .03 percent from 10Hz to 20kHz @ 125 Watts both channels driven into 2 Ohm through 8 Ohms
Gain: 26dB
Maximum Current: >100 Amperes peak per channel
Noise: -120dB referenced to rated output
Input Impedance: 50k Ohms unbalanced/1k Ohms balanced
Output Impedance: .03 Ohms from 20Hz to 20kHz

BRIDGED

Rated Power: 200 Watts with 50 Watts class A @ 8 Ohms mono from 20Hz to 20kHz
Frequency Response: DC to -3dB @ 100kHz
Distortion: < .03 percent from 10 Hz to 20kHz @ 400 Watts driven into 2 Ohms through 8 Ohms
Gain: 32dB
Maximum Current: >100 Amperes peak
Noise: -120dB referenced to rated output
Input Impedance: 1k Ohms unbalanced/1k Ohms balanced
Output Impedance: .06 Ohms from 20Hz to 20kHz

SUPPLY

1500 VA toroidal power transformer and 144,000 uF of capacitance

DIMENSIONS

Height: 5.25" Faceplate, 6.0" Overall
Width: 19.0" Faceplate, 17.0" Chassis
Depth: 12.5" Overall
Weight: 45 lbs., 50 lbs., Shipping
Power requirement: 450 Watts maximum at rated power

The interior of the unit requires no special care. If it becomes necessary to clean the exterior, a simple dusting may be all that is required. If a cleaner is necessary, any dilute commercial ammonia based product will be appropriate. NEVER use any abrasive rags, cleaners or chemical solvents on the AMPLIFIER S5.

When handling the unit, take care not to mar the aluminum. Aluminum is a medium hardness metal and can be scratched by the harder tool steels.

Avoid exposing the unit to direct sunlight, and keep it away from sources of intense heat.

Do not throw away the carton or associated packing material. They are ideal if you need to pack the unit for moving and in the unlikely event that servicing is needed, they will be necessary for safe shipment.

Be sure to provide adequate insurance when shipping.

WARRANTY

I. Warranty- Any failure of Coda products to operate or to meet specifications, applicable at time of manufacture, due to a manufacturing defect or component failure, will be corrected by Coda Technologies, Inc. without charge for parts, or labor for a period of **ten years** from date of original purchase. Coda Technologies, Inc. will provide for surface transportation to the Coda factory from an authorized Coda Technologies, Inc. authorized dealer for a period of one year from date of purchase.

Maximum term for any warranty claim shall be **ten years** from date of original sale, or 11 years from date of manufacture, whichever is shorter. Date of manufacture shall only be defined only manufacture date imbedded in serial number of product.

Warranty shall be transferrable for a period of five years from the date of purchase. Subsequent owners are required to provide proof of sale/transfer from the original owner. Original owner may transfer warranty for the entire period of the warranty. Coda Technologies reserves the right to make the final determination as to validity of warranty claims in cases where ownership or manufacture date is not clear and substantiated in writing.

II. Procedure- If the product should require service under warranty, take it with proof of purchase date, with its carton and packing material, to a Coda Technologies, Inc. dealer. The dealer will arrange for service. Direct shipments to the factory will be not be accepted without advance written authorization (RMA). Coda products purchased outside of the U.S. will be covered by those warranty conditions extended by the importing distributor which may differ in some respects from those given above. Warranty service, if required, is the responsibility of the importing distributor. If a Coda Technologies, Inc. product is removed from the country of original purchase, Coda Technologies, Inc. distributors or dealers are not obligated by the conditions of this warranty and repairs will be affected at their discretion.

III. Exclusion of Coverage- At the sole opinion of Coda Technologies, Inc. the following situations are specifically excluded from coverage:

1. Any product not operated in accordance with the instructions contained in this manual, or otherwise subjected to abuse, tampering, modification, accidental damage, or serial number defacement.
2. Damage to other property caused by any defects in this product, damages based upon inconvenience, loss of use of the product, loss of time, commercial loss, or any other damage whether incidental, consequential, or otherwise.
3. It is Coda Technologies, Inc. policy to extend coverage when reasonable doubt exist; however, freight and diagnostic charges will be billed for any units returned under warranty and found by the company to be operating according to specification.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Coda Technologies, Inc. continually researches new techniques, designs, and construction methods and so reserves the right to introduce refinements into current product lines without notice or obligation. The company may offer product modifications to make these refinements available to earlier production units.

Fill in and retain this copy of the warranty registration sheet for your records .

MODEL DESIGNATION:_____

SERIAL NUMBER:_____

DATE OF PURCHASE:_____

PLACE OF PURCHASE

Dealer:_____

Address:_____

City:_____ State:____ Zip:_____

Phone:_____

PURCHASER

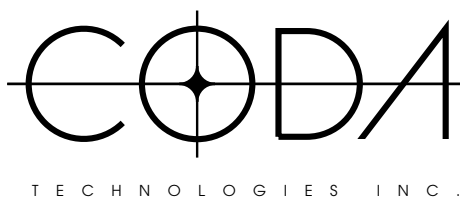
Name:_____

Address:_____

City:_____ State:____ Zip:_____

Phone:_____

NOTES: _____



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